

**Amendments to the Claims**

This listing of claims will replace all prior versions and listings of claims in the application.

Claim 1 (currently amended): A method of analyzing vocal signals of a speaker, comprising:

using a probability density representing resemblances between a vocal representation of the speaker in a predetermined model and a predetermined set of vocal representations of a number E of reference speakers that do not include the speaker in said predetermined model;  
[[and]]

analyzing the probability density to deduce therefrom information on the vocal signals; and

providing an analysis result from a device and applying the result to an application relating to the acoustic vocal signal of the speaker.

Claim 2 (previously presented): The method of claim 1, wherein said predetermined model is an absolute model of dimension D, using a mixture of M Gaussians, in which the speaker is represented by a set of parameters comprising weighting coefficients for the mixture of Gaussians in said absolute model, mean vectors of dimension D and covariance matrices of dimension  $D \times D$ .

Claim 3 (previously presented): The method of claim 2, further comprising:

representing the probability density of the resemblances between the representation of said vocal signals of the speaker and the predetermined set of vocal representations of the reference speakers by a Gaussian distribution of mean vector of dimension E and of covariance matrix of dimension  $E \times E$ , said mean vector and covariance matrix being estimated in a space of resemblances to the predetermined set of E reference speakers.

Claim 4 (previously presented): The method of claim 3, wherein there are  $N_\lambda$  segments of vocal signals for the speaker, represented by  $N_\lambda$  vectors of the space of resemblances with speaker with respect to the E reference speakers is defined as a function of a mean vector of

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dimension E and of a covariance matrix of the resemblances of the speaker with respect to the E reference speakers.

Claim 5 (previously presented): The method of claim 4, further comprising:  
introducing a priori information into the probability densities of the resemblances with respect to the E reference speakers.

Claim 6 (previously presented): The method of claim 5, wherein the covariance matrix of the speaker is independent of said speaker.

Claim 7 (currently amended): A system for the analysis of vocal signals of a speaker, comprising:

databases for storing vocal signals of a predetermined set of speakers and vocal representations associated therewith in a predetermined model by mixing of Gaussians, as well as databases of audio archives; and

a device implementing calculating routines means for analyzing the vocal signals using a vector representation of the resemblances between the vocal representation of the speaker and a predetermined set of vocal representations of E reference speakers that do not include the speaker, the device producing an analysis result that is provided to an application relating to the acoustic vocal signal of the speaker.

Claim 8 (previously presented): The system of claim 7, the databases further storing parameters of the vocal signals analysis performed by said means for analyzing.

Claim 9 (currently amended): The method of claim 1, wherein the application is an applied to indexing of audio documents.

Claim 10 (currently amended): The method of claim 1, wherein the application is an applied to identification of a speaker.

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Claim 11 (currently amended): The method of claim 1, wherein the application is applied to verification of a speaker.

Claim 12 (currently amended): A system for the analysis of vocal signals of a speaker, comprising:

databases for storing vocal signals of a predetermined set of speakers and vocal representations associated therewith in a predetermined model; and

a device implementing calculating routines means for analyzing the vocal signals using a probability density representing resemblances between the vocal representation of the speaker and a predetermined set of vocal representations of E reference speakers that do not include the speaker, the device producing an analysis result that is provided to an application relating to the acoustic vocal signal of the speaker.